

REMARKS

In connection with the RCE filed on April 29, 2003, Applicant submits herewith for consideration a copy of the paper filed on January 29, 2003 in response to the Official Action dated October 29, 2002, and with a copy of the Supplemental Response filed on March 20, 2003.

To date, the Examiner's position for rejection of the pending claims is that the "claimed activating means control command for actuating the actuating means in the desired direction and supply means with voltage polarity that coincides with control command are present in the provided prior art by McElroy et al. (see column 20, lines 58-67 and column 21, lines 1-64)."

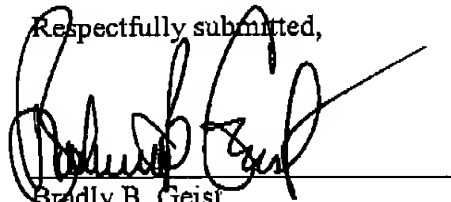
As pointed out in the enclosed, McElroy fails to teach, suggest or otherwise render obvious the subject matter of claims 1-3 to wit: "at least three lines to the actuating means, namely two voltage supply lines and a control line." McElroy uses polarity and polarity alone to determine the direction of the drive " C_p and C_D ". This, according to the applicant, is the teaching of McElroy at column 20, lines 58-67, and column 21, lines 1-64.

In the present invention, the motor is controlled by energizing two terminals by accompanying polarity voltages and by a third terminal which is a confirmatory ("control") line. It is only by use of these three lines, wherein the polarity of the first two lines must coincide with the direction given by the third confirmatory control line, that movement will be release in the corresponding direction.

Applicant hopes that the foregoing is helpful to the Examiner in reconsidering the patentability of the pending claims as set forth in the "Amendment" and

"Amendment (Revised)" filed respectively on July 15, 2002 and August 22, 2002. A copy of both Amendments are submitted herewith. Applicant's attorney respectfully asks the Examiner to call in the event the foregoing is not persuasive of patentability of the pending claims or in the event of any formal deficiency in this submission.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Bradley B. Geist', is written over a horizontal line.

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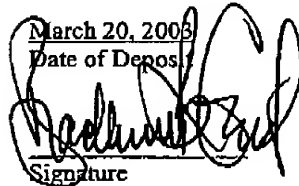
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Norbert Kollmann
Serial No. : 09/781,140 Examiner : Laykin, Rita
Filed : February 12, 2001 Group Art Unit : 2837
For : METHOD AND DEVICE FOR DRIVING AN ELECTRIC
ACTUATOR UNIT

SUPPLEMENTAL RESPONSE

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on March 20, 2003.:

March 20, 2003
Date of Deposit

Signature

Bradley B. Geist
Attorney Name

27,551
Registration No.

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This paper is timely filed in response to the final Official Action (Advisory Action) dated February 26, 2003 and further response to an Official Action dated October 29, 2002.

REMARKS

Applicant's attorney spoke with Examiner Leykin on March 17, 2003, and was advised that the "REMARKS" which were part of the Response filed on January 29, 2003, will be part of the record in the event an appeal is taken. There was some doubt about this in Applicant's attorney's mind in view of the Advisory Action. See "Box 7", which the Examiner checked.

In reviewing the "REMARKS" submitted in response to the Official Action dated October 29, 2002, Applicant wishes to make particularly clear the difference between the present invention as set forth in claims 1-3 and the McElroy patent (U.S. No. 5,835,868), upon which said claims have been rejected as anticipated under 35 U.S.C. §102(b). That difference, simply stated, is that McElroy does not disclose, teach or suggest the use of "at least three lines to the actuating means, namely, two voltage supply lines and a control line." In the prior art McElroy patent, polarity, and polarity alone determines the direction of the drive. In the present invention, the motor is controlled by energizing two terminals by accompanying polarity voltages and by a third terminal which is a confirmatory line. For the direction of movement, the polarity of the first two lines must coincide with the direction given by the confirmatory line. Only in this case will the movement be released in the corresponding direction.

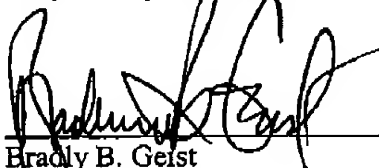
Applicant respectfully requests the Examiner to reconsider her position in light of this clear statement of what is missing from the teaching of McElroy, and which therefore makes the rejection under 35 U.S.C. §102(b) untenable. As the Examiner must know,

§102(b) requires that all of the claimed elements as arranged in the claims (claims 1-3) be disclosed as such in the cited reference.

The due date for filing a Notice of Appeal is set to expire on April 29, 2003.

Accordingly, reconsideration is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Bradley B. Geist', is written over a horizontal line.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Norbert Kollmann
Serial No. : 09/781,140 Examiner : Laykin, Rita
Filed : February 12, 2001 Group Art Unit : 2837
For : METHOD AND DEVICE FOR DRIVING AN ELECTRIC
ACTUATOR UNIT

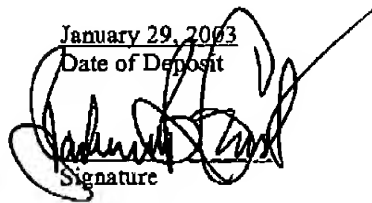
RESPONSE

I hereby certify that this paper is being deposited with
the United States Postal Service as First Class Mail in
an envelope addressed to: Assistant Commissioner
for Patents, Washington, D.C. 20231 on January 29,
2003.

January 29, 2003
Date of Deposit

Bradley B. Geist
Attorney Name

27.551
Registration No.


Signature

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This paper is timely filed in response to the final Official Action dated October
29, 2002.

REMARKS

Claims 1-3 of the present case have been rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,835,868 (McElroy et al.). More specifically, the Examiner relies upon the disclosure shown in Figure 8 and discussed at Col. 21, lines 1-64. The details of the Examiner's argument in support of the rejection are set forth in item 3 on pages 2 and 3 of the Official Action. Applicant respectfully traverses the Examiner's rejection for the reasons discussed below.

The McElroy et al. patent ('868) discloses in relevant part, an electric motor (204), the direction of rotation of which can be determined depending on the polarity of the supply voltage. See Col. 21, lines 28-44. Accordingly, the McElroy et al. electric motor is only understood to be controlled by way of connections M1 and M2 and no other control input for the electric motor (204) is discussed.

In contrast to McElroy et al.'s disclosure, in the present invention, while the direction of rotation of the electric motor is determined according to a polarity, an additional control input is impressed with a control signal, which provides an added measure of safety.

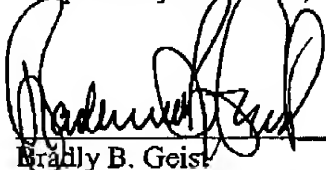
To better understand the present invention, Applicant offers the following example of a steering wheel and ignition lock. In order to use the vehicle, the steering wheel lock must first be unlocked. This is done preferably by means of an electric motor thrusting a bolt into, or withdrawing it from the steering column. In this way, the vehicle can now be steered. However, this bolt must not lock the steering wheel while the vehicle is in motion. For this reason, the electric motor is operated with a polarity control

system, the polarity, of which is set so that only the desired action of locking or unlocking is possible. In addition, there is a control signal, which indicates whether the vehicle is in motion or stationary. If the vehicle is in motion, the bolt must not lock. In this circumstance, the polarity is for the unlocking direction of rotation of the electric motor, with the additional control signal indicating that the vehicle is moving, and therefore, the bolt must not be locked. When the vehicle is parked, the polarity of the electric motor is such that the bolt will lock, and the control signal additionally indicates the parked condition so that the bolt can be locked. Thus the present invention ensures that no locking of the steering wheel lock can occur by mistake while the vehicle is moving in accordance with the double safety polarity and control signal.

Applicant believes that the presently pending independent Claims 1 and 2 cover this novel method and device, as well as the device Claims 3-9, which depend from Claim 2. Applicant notes the Examiner's indication of allowable subject matter in Claims 4-9.

In view of the above, Applicant respectfully requests further reconsideration of the pending claims which are believed to be in condition for allowance

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Norbert Kollmann
Serial No. : 09/781,140 Examiner : Laykin, Rita
Filed : February 12, 2001 Group Art Unit : 2837
For : METHOD AND DEVICE FOR DRIVING AN ELECTRIC
ACTUATOR UNIT

AMENDMENT (REVISED)

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on August 22, 2002.:

August 22, 2002
Date of Deposit

Signature

Andrea Dorigo
Attorney Name

47,532
Registration No.

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This paper is filed in response to the Official Action dated May 9, 2002.

In the Claims:

Please amend Claims 1 and 2 as follows:

C1
--1. (Amended) A method for accurately activating an actuating means comprising sending a control command signal to the actuating means whereby said means is directed to actuate itself in a desired direction, and supplying the actuating means with a polarity having a voltage that coincides with the control command and

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thereby eliminates any other direction of activation, said method requiring at least three lines to the actuating means, namely two voltage supply lines and a control line.--
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(cont)

-2. (Amended) A device for driving an actuator unit via a drive unit, said drive unit comprises a voltage supply input, at least one polarity control input, at least two voltage outputs, wherein the polarity of a signal at the voltage outputs depends on the at least one polarity control input with a signal, and a control input; and said actuator unit comprises a drive motor and at least two voltage inputs which are operatively coupled to said at least two voltage outputs, wherein the drive direction of the drive motor is determined by the polarity of the signal at the at least two voltage inputs and the drive motor is operated in at least one of the drive directions only when the control input is supplied with a predefined control signal.—

A "Version to Show Marked Changes Made" is attached hereto.

REMARKS

By this amendment, independent claims 1 and 2 have been amended to more distinctly claim the subject matter of the invention.

The Examiner has rejected claims 2-9 under 35 U.S.C. § 112 (2nd ¶), arguing that independent claim 2 is vague and indefinite for the reasons advanced in the second paragraph under item 2 on page 2 of the Official Action. Applicant does not understand what precisely the Examiner finds objectionable. Claim 2 clearly recites that the "at least two voltage inputs [of the actuator unit] are generating coupled to said at least two voltage outputs", the antecedent of which are the two voltage outputs of the drive unit. As to "how" "the drive direction of the motor is determined ...", is disclosed in the specification. Accordingly, Applicant respectfully traversed the Examiner's rejection under 35 U.S.C. § 112 (2nd ¶).

On the merits, the Examiner has rejected "Claims 1-4, 5/2, 5/3, 5/4 and 6" under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,910,445 (Borrmann). In support of this rejection, the Examiner advances arguments under item 4, at pages 3 and 4 of the Official Action. Applicant respectfully traverses the § 102(b) rejection for the following reasons.

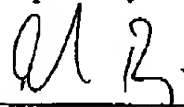
In the claimed invention, for example in the case of a motor that is supposed to rotate in a certain direction, the control signal, e.g. to the left, is issued to the control unit of the electric motor. In addition, the voltage supply ensures that the motor can rotate to the left only. For this purpose, the defined polarity is impressed on the electric motor. This prevents the motor from being able to rotate in the other direction, if by mistake the control command should arrive at the control unit of the electric motor in

error. Therefore a twofold security is achieved, so that the actuating means will really rotate in the desired direction. Thus the invention concerns twofold approach, in which both conditions must always coincide, so that the actuating means will be actuated in the desired direction.

Bormann discloses an approach for the control of an electric motor whereby depending on the desired direction of rotation, the particular voltage with corresponding polarity can be impressed on the electric motor. If the voltage in the control circuit should fall below a critical value, the motor is switched-off by way of a relay RS (col. 4, lines 54-64). In Bormann, a twofold type of control signal is not impressed on the electric motor. Instead the electric motor is merely switched-off if an error is detected in the control circuit. In the present invention, by contrast, both the desired polarity (so that the electric motor will rotate in the desired direction) and the control signal coinciding with that polarity are supplied to the electric motor. Therefore a twofold security is achieved.

Applicant acknowledges the conditional allowance of dependent claims 7-8, but believes that by this amendment and in view of the above remarks, the Examiner's grounds for rejection are not well founded. Accordingly, reconsideration and hopefully allowance of the pending claims is respectfully requested.

Respectfully submitted,



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Version to Show Marked Changes Made

1. ~~A method for driving an electric actuator unit with a polarity-dependent actuation direction comprising:~~

~~supplying the actuator unit with electrical energy having a polarity that determines the actuation direction and which corresponds to a condition that is fulfilled;~~
and

~~activating the actuator unit in at least one of the actuation directions only when a further condition, which is independent of the state of the actuator device or a device actuated by it, is also fulfilled.~~

02. ~~A device for driving an electric actuator unit by means of a driving unit--1.~~

(Amended) A method for accurately activating an actuating means comprising sending a control command signal to the actuating means whereby said means is directed to actuate itself in a desired direction, comprising and supplying the actuating means with a polarity having a voltage that coincides with the control command and thereby eliminates any other direction of activation, said method requiring at least three lines to the actuating means, namely two voltage supply lines and a control line.--

the driving unit comprising:

--2. (Amended) A device for driving an actuator unit via a drive unit, said drive unit comprises a voltage supply input;

-- at least one polarity control input; -- at least two voltage outputs, wherein the polarity of a signal at the voltage outputs dependingdepends on the supplying of the at least one polarity control input with a signal, and a control input; and --thesaid actuator unit comprisingcomprises a drive motor and at least two voltage inputs which are

operatively coupled to said at least two voltage outputs, wherein the drive direction of the drive motor ~~being~~is determined by the polarity of the signal at the at least two voltage inputs and the drive motor ~~being~~is operated in at least one of the drive directions only when the control input is supplied with a predefined control signal.

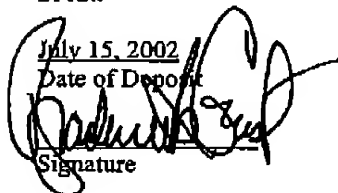
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Norbert Kollmann
Serial No. : 09/781,140 Examiner : Laykin, Rita
Filed : February 12, 2001 Group Art Unit : 2837
For : METHOD AND DEVICE FOR DRIVING AN ELECTRIC
ACTUATOR UNIT

AMENDMENT

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on July 15, 2002.:

July 15, 2002
Date of Deposit

Signature

Bradley B. Geist
Attorney Name

27,551
Registration No.

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This paper is filed in response to the Official Action dated May 9, 2002.

In the Claims:

Please amend Claims 1 and 2 as follows:

—1. (Amended) A method for accurately activating an actuating means comprising sending a control command signal to the actuating means whereby said means is directed to actuate itself in a desired direction, and supplying the actuating means with a polarity having a voltage that coincides with the control command and

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PATENT

thereby eliminates any other direction of activation, said method requiring at least three lines to the actuating means, namely two voltage supply lines and a control line.--

--2. (Amended) A device for driving an actuator unit via a drive unit, said drive unit comprises a voltage supply input, at least one polarity control input, at least two voltage outputs, wherein the polarity of a signal at the voltage outputs depends on the at least one polarity control input with a signal, and a control input; and said actuator unit comprises a drive motor and at least two voltage inputs which are operatively coupled to said at least two voltage outputs, wherein the drive direction of the drive motor is determined by the polarity of the signal at the at least two voltage inputs and the drive motor is operated in at least one of the drive directions only when the control input is supplied with a predefined control signal.—

A "Version to Show Marked Changes Made" is attached hereto.

33966 (071308.0117)
PATENTREMARKS

By this amendment, independent claims 1 and 2 have been amended to more distinctly claim the subject matter of the invention.

The Examiner has rejected claims 2-9 under 35 U.S.C. § 112 (2nd ¶), arguing that independent claim 2 is vague and indefinite for the reasons advanced in the second paragraph under item 2 on page 2 of the Official Action. Applicant does not understand what precisely the Examiner finds objectionable. Claim 2 clearly recites that the "at least two voltage inputs [of the actuator unit] are ^{which operatively} generating coupled to said at least two voltage outputs", the antecedent of which are the two voltage outputs of the drive unit. As to "how" "the drive direction of the motor is determined ...", is disclosed in the specification. Accordingly, Applicant respectfully traversed the Examiner's rejection under 35 U.S.C. § 112 (2nd ¶).

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In the claimed invention, for example in the case of a motor that is supposed to rotate in a certain direction, the control signal, e.g. to the left, is issued to the control unit of the electric motor. In addition, the voltage supply ensures that the motor can rotate to the left only. For this purpose, the defined polarity is impressed on the electric motor. This prevents the motor from being able to rotate in the other direction, if by mistake the control command should arrive at the control unit of the electric motor in

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error. Therefore a twofold security is achieved, so that the actuating means will really rotate in the desired direction. Thus the invention concerns twofold approach, in which both conditions must always coincide, so that the actuating means will be actuated in the desired direction.

Borrmann discloses an approach for the control of an electric motor whereby depending on the desired direction of rotation, the particular voltage with corresponding polarity can be impressed on the electric motor. If the voltage in the control circuit should fall below a critical value, the motor is switched-off by way of a relay RS (col. 4, lines 54-64). In Borrmann, a twofold type of control signal is not impressed on the electric motor. Instead the electric motor is merely switched-off if an error is detected in the control circuit. In the present invention, by contrast, both the desired polarity (so that the electric motor will rotate in the desired direction) and the control signal coinciding with that polarity are supplied to the electric motor. Therefore a twofold security is achieved.

Applicant acknowledges the conditional allowance of dependent claims 7-8, but believes that by this amendment and in view of the above remarks, the Examiner's grounds for rejection are not well founded. Accordingly, reconsideration and hopefully allowance of the pending claims is respectfully requested.

Respectfully submitted,



Bradley B. Geist

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PATENT

Version to Show Marked Changes Made

A method for driving an electric actuator unit with a polarity-dependent actuation direction comprising:

supplying the actuator unit with electrical energy having a polarity that determines the actuation direction and which corresponds to a condition that is fulfilled; and

activating the actuator unit in at least one of the actuation directions only when a further condition, which is independent of the state of the actu A device for driving an electric actuator device or a device actuated by it, is also fulfilled. unit by means of a driving unit, comprising:

the driving unit comprising:

a voltage supply input;

at least one polarity control input;

at least two voltage outputs, the polarity of a signal at the voltage outputs depending on the supplying of the at least one polarity control input with a signal and a control input; and

the actuator unit comprising a drive motor and at least two voltage inputs which are operatively coupled to said at least two voltage outputs, the drive direction of the drive motor being determined by the polarity of the signal at the at least two voltage inputs and the drive motor being operated in at least one of the drive directions only when the control input is supplied with a predefined control signal. ator device or a device actuated by it, is also fulfilled.

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PATENT

A device for driving an electric actuator unit by means of a driving unit, comprising:

the driving unit comprising:

a voltage supply input;

at least one polarity control input;

at least two voltage outputs, the polarity of a signal at the voltage outputs depending on the supplying of the at least one polarity control input with a signal and a control input; and

the actuator unit comprising a drive motor and at least two voltage inputs which are operatively coupled to said at least two voltage outputs, the drive direction of the drive motor being determined by the polarity of the signal at the at least two voltage inputs and the drive motor being operated in at least one of the drive directions only when the control input is supplied with a predefined control signal.